CLAIMS

1. Method for planning a telecommunications network for radio equipment including a plurality of cells arranged on a geographic area, wherein each one of the cells comprises a set of elementary territory areas (pixels) adapted to receive radio signals radiated by a respective radio base station and wherein a radio equipment (ME) located in a cell (C_i) is subjected to receive common pilot channel signals (CPICH, CPICH', CPICH'') broadcast by a plurality of radio base stations (SRB, SRB', SRB''),

the method including, for at least one of said cells (C_i):

determining an interference level provided by nearby cells (C_j, C_k) to the traffic offered to the pixels of said cell (C_i), related to the power difference between pilot channels (CPICH) broadcast by the radio base station (SRB) of said cell (C_i) and pilot channels (CPICH', CPICH'') broadcast by the respective radio base stations (SRB', SRB'') of nearby cells (C_j, C_k), and

determining an area comprising the pixels of the cell (C_i) in which the network is able to provide predetermined services to the radio equipment (ME) located therein, depending on said determined interference level and by comparison with a predetermined level of tolerated interference,

characterized in that said interference level provided by the nearby cells (C_j, C_k) to the traffic offered to the pixels of said cell (C_i) is estimated by using at least a coefficient depending on the amount of expected traffic in the pixels of said cell (C_i).

2. Method according to Claim 1, characterized in that the estimation of the interference level is computed for

every pair of cells (C_i, C_j; C_i, C_k) by determining the average, extended to said cell (C_i), of the ratio between interfering signal and useful signal related to the pilot channels (CPICH', CPICH; CPICH'', CPICH) broadcast by the respective radio base stations (SRB', SRB; SRB'', SRB) of said pair of cells (C_j, C_i; C_k, C_i), weighed with the offered traffic or the number of active users in said cell (C_i) on various services.

3. Method according to Claim 2, characterized in that depending on the estimation of the interference level computed for every pair of cells (C_i, C_j; C_i, C_k) a priority ordering is established according to decreasing values of the pairs of cells (C_i, C_j; C_i, C_k) affected by interference, thereby to determine a network resources assignment order to minimize said interference.

4. Method according to Claim 3, characterized in that one or more radio-electric parameters are modified for at least one of the cells of each pair of cells (C_i, C_j; C_i, C_k) affected by interference to minimize the negative effects of interference on the traffic, the modification of said parameters being determined depending on said priority ordering.

5. Method according to any one of the previous Claims, characterized in that said common pilot channels are the CPICH pilot channels (CPICH; CPICH'; CPICH'') of the Base Radio Station (SRB; SRB'; SRB'').

6. Method according to Claim 5, characterized in that the estimation of the interference level between pilot channels (CPICH, CPICH', CPICH'') of nearby cells (C_i, C_j, C_k) is performed on a territory area comprising the pixels composing the domain of the server cell (C_i).

7. Method according to Claim 5, characterized in that the estimation of the interference level between pilot channels (CPICH, CPICH', CPICH'') of nearby cells (C_i, C_j, C_k) is performed on a territory area comprising the pixels composing the service area of the server cell (C_i).

8. Method according to Claim 7, characterized in that the estimation of the interference level between pilot channels (CPICH, CPICH', CPICH'') of nearby cells (C_i, C_j, C_k) is performed in the service area of the server cell (C_i) after having determined the areas under unavailability or out-of-order ("outage") conditions.

9. Method according to Claim 2, characterized in that the useful signal power and the interfering signal power of pilot channels (CPICH, CPICH', CPICH'') are computed depending on the electromagnetic coverage areas of the cells (C_i, C_j, C_k).

10. Method according to Claim 2, characterized in that the interference level estimation is computed according to the formula:

$$IM_{poll}[i,j] = \begin{cases} \dfrac{\sum_{s \in SERV_i} \sum_{(m,n) \in \Omega_i} \dfrac{RSCP^j_{(m,n)}}{RSCP^i_{(m,n)}} \cdot T^s_{(m,n)} \cdot R_s}{Npix_i \cdot \sum_{s \in SERV_i} T^i_s \cdot R_s} & if\ i \neq j \\ 0 & if\ i = j \end{cases}$$

so that said estimation assumes a real value included between 0 and 1, values next to 1 corresponding to a higher importance of the interference contribution of cell j to the traffic in i area cell.

11. Method according to any one of the previous Claims, characterized in that the traffic offered in the cell (C_i) on various services is estimated depending on pre-existing reference or forecast information.

12. Method for limiting interference due to common pilot channel broadcast by a plurality of radio base stations in a telecommunications network for radio equipment including a plurality of cells distributed on a geographic area, wherein each one of the cells comprises a set of elementary territory areas (pixels) adapted to receive radio signals radiated by a respective radio base station and wherein a radio equipment (ME) located in a cell (C_i) is subjected to receive pilot channel signals (CPICH, CPICH', CPICH'') broadcast from said plurality of radio base stations (SRB, SRB', SRB''),

the method including, for each cell (C_i):

determining an interference level provided by nearby cells (C_j, C_k) to the traffic offered to the pixels of the cell (C_i), related to the power difference between pilot channels (CPICH) broadcast by the base station (SRB) of the cell (C_i) and pilot channels (CPICH', CPICH'') broadcast by base stations (SRB', SRB'') of nearby cells (C_j, C_k), and

determining an area comprising the pixels of the cell (C_i) in which the network is able to provide predetermined services to the radio equipment (ME) located therein, depending on said determined interference level and by comparison with a predetermined level of tolerated interference,

characterized in that said interference level provided by the nearby cells (C_j, C_k) to the traffic offered to the pixels of the cell (C_i) is estimated by using a coefficient depending on the amount of expected traffic in the pixels of said cell (C_i).

13. Radio network planned using the method according to Claims 1 to 12.

14. Processing system (10) for planning a telecommunications network for radio equipment, programmed to perform a method according to any one of Claims 1 to 12.

15. Computer program product or group of computer program products that can be executed by a processing system (10), comprising one or more code modules for performing a method according to any one of Claims 1 to 12.